

REMARKS

In response to the Official Action mailed on January 29, 2010, the application has been amended. No new matter has been added. Reconsideration of the rejections of the claims is respectfully requested in view of the above amendments and the following remarks.

On page 2 of the Official Action, claims 8 - 15 were rejected under 35 USC 103(a) as unpatentable over Goudarzi et al (US 2006/0021466 A1, referred to below as Goudarzi). This rejection is respectfully traversed.

Amended claim 8 describes a lead-free solder paste comprising powders of a first and second alloy powder, in which the first alloy powder contains 6 - 20 mass % of In. Amended claim 8 is supported by claim 4 of the application as filed. Goudarzi does not disclose or suggest such a solder paste.

Goudarzi discloses a solder paste which is a mixture of first and second alloys which differ from each with respect to their liquidus temperatures by at most 10°C and preferably at most 5°C. Goudarzi is vague about the compositions of the first and second alloys, with the only specific example of the first alloy being in paragraph 022, which describes a Sn-Ag-Cu alloy as the first alloy, and the only specific example of the second alloy is in paragraphs 024 and 025, in which the second alloy is

Sn-Ag. Paragraph 021 describes an embodiment in which the first alloy contains Sn, Ag, Cu, and at least one of Zn, Bi, Ni, and In in an amount of about 0.1 to about 5 wt % "based on the total weight of the alloy". The words "weight of the alloy" are not used anywhere else in Goudarzi, but from the context, it is clear that "the alloy" refers to the first alloy, because when Goudarzi refers to the combination of the first and second alloys, it refers to "the particle mixture" (paragraph 030).

Therefore, the maximum permissible In content in the first alloy of Goudarzi is only 5%, which is well below the minimum value of 6 mass % set forth in claim 8. Since Goudarzi does not suggest the possibility of the In content of the first alloy being greater than 5 wt %, it does not suggest the feature of amended claim 8 that the In content of the first alloy is at least 6 mass % and so cannot render claim 8 obvious. Claim 8 and claims 9 - 15 which depend from it are therefore allowable.

Claim 8 has also amended to correct a typographical error. In lines 4 and 5 of claim 8, "the first solder alloy and the solder alloy" should have been "the first solder alloy and the second solder alloy". This amendment constitutes the correction of an obvious error and is supported by claim 5 of the application as filed, which refers to the difference in the main peak temperature of a first solder alloy powder and a second solder alloy powder.

Of the dependent claims, claim 10 has not been changed in scope, since it already included the feature (an In content in the first alloy powder of 6 - 20 mass %) which was added to independent claim 8.

Claims 13 and 14 are allowable as depending from claim 8 and are further allowable in their own right. Claim 13 states that the first solder powder is selected from a Sn-Ag-In alloy and a Sn-Ag-In-Bi alloy, and the second solder alloy is selected from a Sn-Ag-Cu alloy and a Sn-Ag-Bi-Cu alloy. In Goudarzi, the only option presented for the second alloy is a Sn-Ag alloy, and there is no suggestion in Goudarzi of a solder paste in which each of a first alloy and a second alloy has three or more components, as set forth in claim 13 and claim 14 which depends from claim 13.

New claim 16 describes additional features of the present invention. Claim 16 states that the overall composition after melting the first and second alloy powders contains 6 - 10 mass % of In. As stated above, in Goudarzi, the content of In in the first alloy may be about 0.1 to about 5 wt %. According to paragraph 030 of Goudarzi, the mixture of the first and second alloys contains about 50 wt % to about 90 wt % of the first alloy. If the first alloy in Goudarzi contains 5 wt % of In, which is the maximum content of the fourth metal, then the maximum possible In content in the mixture formed from the first and second alloys occurs when the first alloy constitutes 90 wt % of the mixture, which gives an In content of [(5% of 90% of the

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mixture) + (0% of 10% of the mixture) / 100% = 4.5 wt %. Thus, the maximum possible content of In in the mixture of the first and second alloys in Goudarzi is well below the minimum value of 6 wt % set forth in claim 16.

In light of the foregoing remarks, it is believed that the present application is in condition for allowance. Favorable consideration is respectfully requested.

Respectfully submitted,



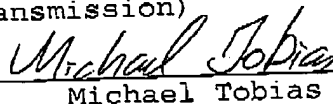
Michael Tobias
Registration Number 32,948
Customer No. 27649

1629 K Street, N.W., Suite 300
Washington, D.C. 20006
Telephone: (301) 571-0052
Facsimile: (301) 571-0069
Date: June 1, 2010

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